

(Check) Teaching Social Critique to Adults with A Desktop Horror Myth Game

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Teaching Social Critique to Adults with A Desktop Horror Myth Game

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Abstract

This paper propose a serious game to teach social critique to adults with a desktop horror myth game, as the moral story of the myth fits to the social subject to teach to the player/learner. Social problems have been an interesting subject to talk, discuss, and debate in all around the world. This due to the wave of change and shift in the population cohort, and influence the behaviour differences within population cohort, causing a plenty of social problems in the world. Research shown that in Indonesia, social problem is one of the highlight in the society nowadays. Hence, this research is aiming to contribute to a design of a serious game teach social critique to adults, and the evaluations of the serious game design for social problems. The results demonstrate the participants rated that they are happy with the game. Moreover, from the questionnaire, the average score for all items is 3,968, and the highest score belongs to Q6 (4,223), while the lowest score belongs to Q4 (3,800). Moreover, 81% of the players got the right messages about social critique to the society. Finally, the short interview shows the participants felt that the experience when playing the game empower them to get right messages about social critique to the society, where 90% agreed they have gained knowledge and awareness regarding to Narcotics Psychotropic and Addictive Substance and culture of littering arise in the Indonesia.

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1. Introduction

Games have been popular for not only children but also with adults (i.e. 18 years or older). More than 60 percent of the game in the market are designed and played by adults. The interaction with game characters, objects, and worlds create immersion feeling and unique experience to the players towards the game. Taking this advantage, games can also be used not only for fun or entertainment, but also for learning, marketing, business, and others. There are a number of research done in blending learning elements to the game to design a serious game^{1,2,3}. The general aim

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for a serious game is to incorporate education content explicitly or implicitly to the game design elements. This allow a learner to learn particular subject while playing the game. Research shown that serious game allows the player (or learner) to learn and remember more the subject given compare to the traditional learning methods if learning elements are accurately integrated into the game design³. This will create seamlessly learning process while playing the game.

This paper propose a serious game to teach social critique to adults with a desktop horror myth game. An Indonesian myth story, a story about Bunian People, a myth from Minangkabau was chosen as the moral story of the myth fits to the social subject to teach to the player (or learner). In the story, Bunian people usually like to distrub and mislead people to do something bad to their society. In the proposed game, the story is set around the Bunian people influence or make a person to do something bad to their friends and the community. Literature refers social critique as criticism of the way we live in the society^{5,6}. The criticism generally caused by the problems arised from a few number of people or group⁶. Social problems have been an interesting subject to talk, discuss, and debate in all around the world. This due to the wave of change and shift in the population cohort (e.g. from Baby Boomer to Gen X, Gen X to Millennials, Millennials to Alpha, etc). Moreover, the technology now has been increasingly advancing throughout the era. Those factors are giving influence to the behaviour differences within population cohort causing a plenty of social problems in the world. Research shown that in Indonesia, social problem is one of the highlight in the society nowadays⁷. Teaching the society with a traditional way of learning (i.e. lecture) is an almost impossible and daunting tasks as the new cohort of society has different style of learning.

Hence, this research is aiming to contribute to a design of a serious game teach social critique to adults, as well as the evaluations or results of the serious game design for social problems. From the initial study, social problems chosen by the participants to be critique are Narcotics Psychotropic and Addictive Substance (35%) and culture of littering (42%). The results demonstrate that most of the participants (97%) rated that they are happy with the game. All of the participants agreed that the story of the game was the best and they were immersed through sound (97%), animation/art (97%), and story (80%). All of the participants can get what the social problems embedded in the game and they felt that all the instruction given in the game was very clear. Moreover, from the questionnaire results, the players rated the game with an average score of 3,968, with the highest score belong to Q6 and the lowest score belong to Q4. Moreover, most of the players (81%) got the right message blended into the game about social critique . Finally, the interview results also demonstrates that most of the players felt that the experience when playing the game empower them to get right messages about social critique to the society.

2. Related Work

Games have been popular tools to be used to help learning process. This is because in the game the players are actively interacting with the game characters, objects, and worlds create immersion feeling and unique experience to the players towards the game. Moreover, game technology nowadays have been significantly increasing. The researchers or game designers can benefits some advanced technology such as Virtual Reality or Augmented Reality^{8,9}, GPS^{10,11,12}, and other sensors (e.g. accelerometer, gyroscope, camera, speaker)^{13,14,15}. Those technologies allow players to feel more immersive into the game story, and play^{10,16,13}. Research have been shown that game significantly help the players (or learners) to learn particular subjects^{4,17}. Some research have been done to design a serious game to teach about culture to children or adults¹⁷, to teach the players about political subject¹⁸, or to teach the players (or learners) about literacy¹⁹. All the studies shown that with the subject blended into a game, the players felt gaining more information as they were not feeling that they were learning at all. They felt that they were playing a game instead of learning. This of course depends on the design of the game, if the game is well designed blended with the subjects to be learnt or taught, then the player will feel that the subjects blended are the part of the game play.

There are also a number of research have been done in creating or designing a serious game to teach society a social context or making them aware of social problems in the society. Some were specifically designed for children and adolescent^{20,21}. Children players are relatively easier to deal with compare to the adult players, as most of the children are not as critical as adults in playing games. Hence, the adults players are tend to realise that the game is not the game they thought when spotting something missing or wierd in the game due to poor game design. Finally, there are also some research have been done in creating or designing a serious game to teach society a social context or making them aware of social problems in the society for adults^{1,2,3}. Although, several research have been done in the area of serious game for education, particularly to teach social critique, there are still limited literature in serious



Fig. 1. Research Methods

game for social critique for adults. Moreover, social contexts are unique in every country, nation, and society^{1,2}. This paper contributes to the design of serious game for social critique for adults with specific problems according to the initial survey to the society. The paper also describes the methods to seamlessly blended the learning subject to the game play. The game then is evaluated in details with UI/UX (players experiences) and the learning aspects, where most of the literature evaluation only evaluated the game with only the learning aspects^{1,2,3}.

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3. Methods

The research methods are divided into three major phases. Fig. 1 illustrates the research methods proposed in this paper. The first methods was an initial research regarding to serious game in education in general and serious games to help player learn, see, and deal with social problems in particular. In this phase, a comparison of similar serious game was also conducted to see what have been done in this research area. Next step after initial research conducted was the development phase. In the development phase, there was two sub tasks. The first one was a pilot study or survey to game players for game requirement analysis. The second and core sub task in this phase was the game development. The game was designed based on Ernest's Game Design²², where the details are thoroughly explained in the next section. Moreover, the game development project adhere Ernest's Scrum methodology²². In the Ernest's Scrum software development methodology, there are three steps, they are: Concepts, Elaboration, and Tuning Stage (design Process). Ernest's Scrum methodology applied general software development methodology to the game design. This allows a specific methodology development for games. The Concepts step was blended into the initial research and pilot study for analysis requirements, where are described in the next section. The Elaboration step, the designers and researchers were crafting the game based on the initial research and pilot study results and recommendation. This step were done repetitively to adjust the game dynamic and balancing, so the learning objectives blended into the game can be achieved by the learners (i.e. players). Finally, the final stage of the Ernest's Scrum software development methodology is the Tuning, where the UI/UX and the game design (e.g. game balancing) were fine-tuned based on the evaluation results on the User Acceptance Test (UAT) or/and Alpha Testing. Again this phase aimed to make sure that the learning objectives blended into the game can be achieved by the learners (i.e. players).

Based on the literature review, and the pilot study for requirement analysis, the social problems chosen in this research are problem with Narcotics Psychotropic and Addictive Substance and culture of littering in most of developing country such as Indonesia. Although the problems are quite different, the researcher and some game designers are managed to create a story line that can tackle those two problems in a good storyline in proposed serious game. The story is elaborated in the next section. Finally, the last phase in this research methods was the evaluation phase. In the evaluation, there were two sub categories or classifications of the evaluation. They are: Alpha Testing as the initial testing; User Acceptance Test (UAT) as well as comparison towards similar games in the initial research phase; and second categories or classifications of evaluation was the surveys (i.e. questionnaires) and short interviews towards the game. All the results of the evaluation are described comprehensively in the next section.

4. Results

The development of the serious game was implementing Ernest's Scrum methodology²². The methodology was chosen because the methodology allows research and development in a specific area: games. This methodology incorporate the game design method with software development method; Hence allowing the designers and researchers to

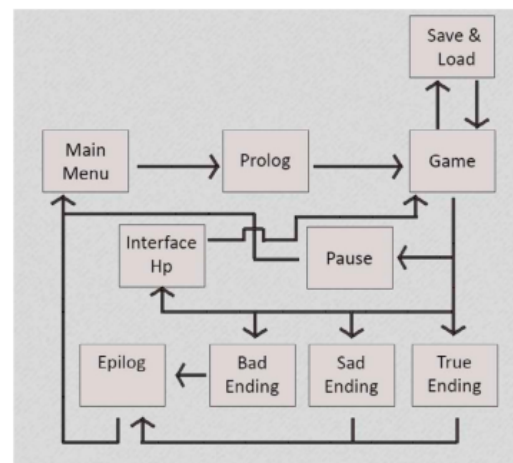


Fig. 2. The Game Flow

craft a game based on the pilot study recommendation. The general flow of the methodology is that first the researchers and game designers drafting a concept based on the initial research and pilot study for analysis requirements. Next, the concept draft along with the game design document are used as a guideline in the game development. Throughout the development phase, the evaluation is conducted to adjust the game dynamic and balancing, so the learning objectives blended into the game can be achieved by the learners (i.e. players). Finally, the final stage of the Ernest's Scrum software development methodology is the Tuning, where the UI/UX and the game design (e.g. game balancing) were fine-tuned based on the evaluation results on the User Acceptance Test (UAT) or/and Alpha Testing. Again this phase aimed to make sure that the learning objectives blended into the game can be achieved by the learners (i.e. players). The game then finally evaluated (the UI/UX/player experiences, and the learning aspects) to the respondents using questionnaire and short interview.

4.1. Concepts Step

In this step, the researchers and game designers were preparing to design the serious game. There were a number of guiding questions to be answered in this research. The literature review, comparison of similar games, as well as the pilot study were the guiding activities that help to answer the guiding questions. The literature review part can be seen in the Recent Work section. The games that were chosen as a comparison were Slender: The Arrival, Daylight, and Anna. All the chosen game are first person point of view and horror themed. All the game play were quite similar, the feeling, and experience of the horror were more or less quite similar. All of games also have puzzles as their story or part of game. Finally, the last guiding activity to help to answer the guiding questions to be answered in this research (e.g. what kind of game, what kind of story, what are the social problems that most people care about) was the survey. The survey were conducted with forty participants of questionnaire. 90% of the respondents aged 17 or older and only half of them (52%) have played horror game genre. Most of respondents who played horror game, played Silent Hill and Slender: The Arrival as their favourite game. Moreover, most of the respondents (48%) agreed that graphics and story would be a good drive to enhance the experience of learning in the game. Majority (90%) of the respondents agreed that puzzle should help the learning process as well as to enhance the player's experiences and impressiveness in the game. Finally, the respondents would love to have a game that is trying to tackle social problem in Indonesia, with specific problems are: the culture of littering (42%) and problem with Narcotics Psychotropic and Addictive Substance (35%).

The next step in the concept step was the game design. The story of the game is that there were eight students who are having their camping trip in a fiction place in Indonesia, called *Bukit* (Hill) Jelajah. The eight students were planning to camp there to spend their semester break. One of them named Budi who became the main character who can be the controlled players (first person view). Budi will play a role as the person who finds out what happened to the Roaming hill because his 6 friends lost. Budi is in a state of overdose of Dextromethorphan substance and has only

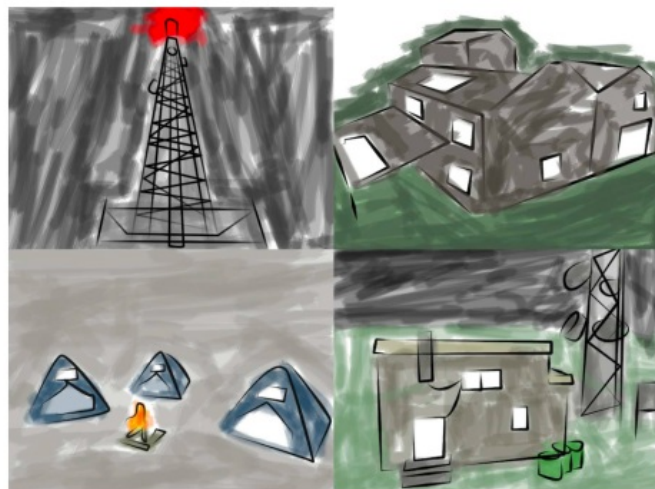


Fig. 3. Game Art Concepts. Top Left: Tower, Top Right: Houses, Bottom Left: Camping Area, Bottom Right: Warehouse

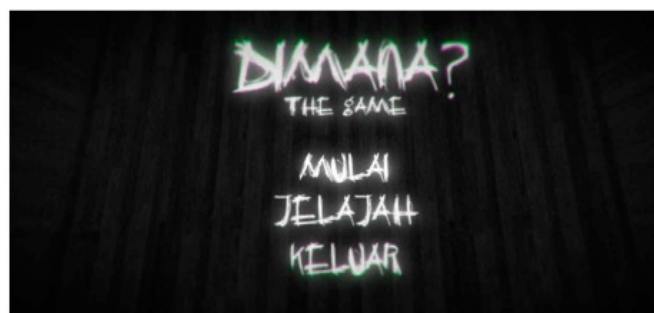


Fig. 4. Game Menu Design

about 10 minutes of life remaining. In these 10 minutes Budi can search his friend's mobile phone to access their last voice mail or notes inside the phones. There are 7 mobile phones belong to Budi and his friends, those are scattered on Jelajah hill. By collecting the mobile phone, budi will be able to find out what happened to his friends and analyse who the psychopath between the seven of Budi's friends. This game has 2 challenges, they are: Time, because Budi has been poisoned and second one is To run from the Bunian. Time given to finish the challenges is approximately 10 minutes. The Bunian is a ghost that usually kidnap people according to the Minang folklore. In the game story, the Bunian here should be not real, but a hallucination created by Budis brain due to the drug. There are three conditions to finish the game. The first condition is to collect all the mobile phone to discover the whole/true story, this condition triggers the wining condition of the player. The second condition triggered when Budi is kidnapped by the Bunian, because Budi runs out of time when collecting all the mobile phones for clues. This condition triggers a bad ending in the game. The last condition is triggered when Budi is finally dead of poisoning, where the condition will trigger the sad ending in the game. Fig. 2 illustrates the flow of the game story.

4.2. Elaboration Step

Based on the previous step, the serious game designed in this research is a serious game that aims to teach social critique to adults with a desktop horror myth game. Fig. 4 shows the design for the initial game menu. The font demonstrates the horror feeling and providing the horror experience to the player (or learner). There are several features in this serious game, they are: This game implements the point of view of the first person as the main character; The game world in the game is using a background of one of the hilly areas in Indonesia, named Jelajah hill



Fig. 5. Game Play. Top Left: Camping Area, Top Right: The Enemy, Bottom Left: Mobile Phone View, Bottom Right: The World

(fiction). To build the experience and suspension, the setting was set to a dark atmosphere at night in the hilly area and just filled in full moonlight lightning. The player is given a flashlight with minimum light to provide an atmosphere of tension in this game. Similar to the other puzzle adventure game in general, the information and instructions about the game (e.g. how to solve the puzzle, or how to finish the game) are not directly informed at once to the player, but they are given bits by bits every time the player finds the smartphone. The main character will become unconscious because of the toxic effects when the time given runs out (i.e. 600 seconds). Fig. 3 illustrates the initial art design of the game and Fig. 5 demonstrates the game play.

4.3. Tuning Step

In the tuning step, there were some adjustments made in the game mechanics and story to adjust the learning elements to the game. The final concepts are as follows: Budi, the main character of the game, is a student who has just completed his final year in the university. He was invited by his friend Denis along with their other friends: Ami, Ahmad, Riska, Miska, Beni, Hendri, to climb and camp at Bukit Jelajah to celebrate their success in the final year of their university life. In the night, Budi woke up from his stupor and was still dizzy from drinking soda given by Denis. He realised that all his other friends were not around by the tent, and assume that they are missing. The loud sound from his mobile phone alerted him, as he read the notes on his cell phone, Budi decided to look for his other friends where the only clue about their circumstances was from the last note on Budi's cell phone. Budi has to find all the mobile phones to collect the complete clues regarding to what was happening during that night, before time runs out or Bunian catch him. If the player explores all the endings (i.e. bad, sad, and good) the player will be able to find out the complete story of the game (see Fig. 2). Budi was poisoned with Dextromethorphan substances that resulted in him feeling stoned and lack of focus. This substance also causes Budi hallucinating that he is being followed by the Bunian and one of the ending (i.e. bad) caught by that creature. If time given runs out, a scene will be triggered where Budi is in a very bright and dazzling room. Turns out that it is a hospital nearby the Hill. A local resident found Budi unconscious lying in the ground and take him to the hospital. From the news and police investigation, they found out that Denis is the psychopath who has compiled the itinerary that led to the massacre of Budi's friends. The evidence of the massacre can be found in the form of a bloody knife near Ahmad's cell phone, a friend of Budi who became one of the victims. From one epilogue it can be seen that the six friends of Budi had been killed in finding at Bukit Jelajah, where Budi was not one of them. This triggers a sad ending.

Social criticism implicitly incorporated into this game is the sarcasm of human ignorance to the environment, that is displayed through the amount of garbage scattered in some locations. Budi would say a sarcasm word or a complain when approaching with the garbage or interacting with objects near the garbage. The mechanism (as a game balancing) that exists in this game beyond the branching of the story is that the Bunian people will continue to accelerate in pursuit of Budi in accordance with the number of mobile phones gained. Bunian people increase by 0.4 with initial speed of six. Residential people sounds/voices are heard with a radius of 500 metre, and when the player approach the sound (approximately 0.8 metre), the sound will turn into a scream to build tension in the game. Mobile phones are scattered in six different locations (excluding Budis). The location will be randomised from three events after the prologue. Therefore this game has a ratio of 1: 3 to bring the location of the same mobile phone.

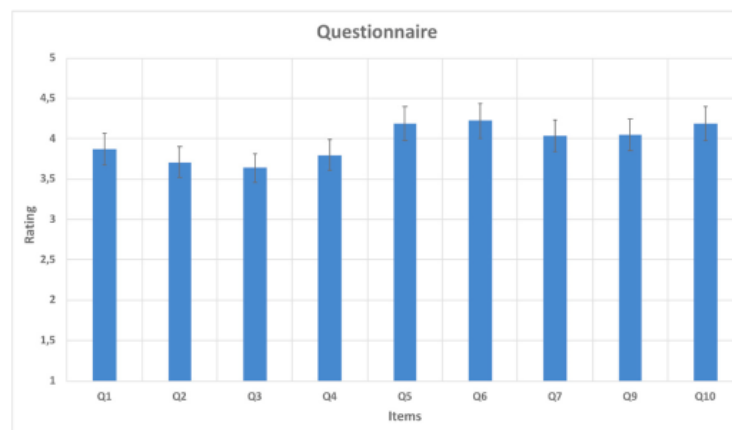


Fig. 6. Questionnaire Results

Players (or Learners) will get a chance of 4 seconds to stare at the Bunian. If the player continues to stare the Bunian (i.e. the player is not running from the Bunian), then the game will stop and trigger the bad ending.

4.4. Evaluation

To evaluate the game, there were two sub categories or classifications of the evaluations. They are: user acceptance test and the comparison towards similar games in the initial research phase. The next evolution done towards the game was the questionnaires and short interview to the players. The user acceptance test aimed to analyse and see if there any bugs in the game, as well as to see if the features can be increased or enhanced in the game, and also to see if there is any features needed but have not been implemented yet in the game. There were only two round of user acceptance test in the game development and the results of the testing were become the input to the next development phase. Moreover, a questionnaire and short interview were conducted to eighty participants who are aged 17 or above. There are nine core questions in the questionnaire, they are: Q1: Overall look and feel of the game, Q2: The player experiences towards the game theme (i.e. horror), Q3: The player experience towards the game visual, Q4: The player experience towards the game audio, Q5: The player experience towards the game story, Q6: The instruction given/provided, Q7: The game balancing level, Q8: Social critique that player's got, Q9: The social critique learning material seamlessly blended into the game, Q10: Element of learning that player get. Q1 to Q7 evaluate the players experiences when playing the game, while Q8 to Q10 evaluate the learning aspect in the game. Q1 to Q7 and Q9 to Q10 are presented with five Likert-scale, while Q8 is presented with some closed options to be chosen by the correspondents. Finally, the short interview was also conducted to evaluate: I1: Learning experience through game compare to the traditional lecture, and I2: Input for improvements.

Fig. 3 demonstrates the overall results of the questionnaire. The average score for all items is 3,968, and the highest score belongs to Q6 (The instruction given/provided) with a score of 4,223, while the lowest score belongs to Q4 (The player experience towards the game audio) with a score of 3,800. Overall the respondents Overall, the game was rated relatively high score. Most of the participants (97%) rated that they are happy with the game. All of the participants agreed that the story of the game was the best and they were immersed through sound (97%), animation/art (97%), and story (80%). All of the participants can get what the social problems embedded in the game and they felt that all the instruction given in the game was very clear. The social critique rating and learning aspect rating also got quite high score, 4,05 and 4,188 respectively. This indicates that the respondents felt that the learning materials (i.e. social critique) seamlessly blended into the game. Moreover, Q8 resulted in 43% of the players got a message about rubbish/trash (right message), 38% of the player got a message about drugs (right message), 12% of the player got that they have to always know their friend location, and 7% of the players felt that there is social critique messages in the game. This means, 81% of the players got the right messages about social critique to the society. From the interview, most of participants aggred that delivering messages about social critique to the society is quite effective and more

fun compare to the traditional ways to deliver it (e.g. teaching or lecturer or book). The players felt that the experience when playing the game help them to remember the message.

5. Discussion and Future Work

This paper propose a serious game to teach social critique to adults with a desktop horror myth game. An Indonesian myth story was chosen as the moral story of the myth fits to the social subject to teach to the player (or learner). From the evaluation, the players (or learners) were happy with the game and all of the participants agreed that the story of the game was the best and they were immersed through sound (97%), animation/art (97%), and story (80%). All of the participants can get what the social problems embedded in the game and they felt that all the instruction given in the game was very clear. Majority of the participants (90%) agreed that they have gained knowledge and awareness regarding to social problems (i.e. Narcotics Psychotropic and Addictive Substance and culture of littering) arise in the Indonesia, through the game. The average score for all questionnaire is 3,968, and the highest score belongs to Q6 (The instruction given/provided) with a score of 4,223, while the lowest score belongs to Q4 (The player experience towards the game audio) with a score of 3,800. Also 81% of the players got the right messages about social critique to the society. Moreover, from the interview, the participants felt that the experience when playing the game empower them to get right messages about social critique to the society. The future work for the game is to add more story and ending to the story. Moreover, more social problems can be embedded into the game chapters.

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